

Mineral Industry Surveys

For information, contact:

Donald W. Olson, Abrasives Commodity Specialist
U.S. Geological Survey
983 National Center
Reston, VA 20192
Telephone: (703) 648-7721, Fax: (703) 648-7975
E-mail: dolson@usgs.gov

Nicholas A. Muniz (Data)
Telephone: (703) 648-7980
Fax: (703) 648-7975
E-mail: nmuniz@usgs.gov

Internet: <http://minerals.usgs.gov/minerals>

MANUFACTURED ABRASIVES IN THE SECOND QUARTER 2005

The U.S. Geological Survey (USGS) collects quarterly data on manufactured abrasives through its survey of producers. Manufactured abrasives included in this report are fused aluminum oxide, silicon carbide, and metallic abrasives. Where indicated, Canadian and United States data are combined to protect proprietary information. Except where noted, the quantities cited in this report are in metric units. All unit value calculations in this report are based on unrounded data.

Fused Aluminum Oxide

The total production during the second quarter of 2005 was estimated to be 5,000 metric tons of regular-grade crude fused aluminum oxide with an estimated value of \$1.5 million. Only one company, which operates one plant in Canada, produced fused aluminum oxide. This total production figure has been rounded to the nearest 5,000 tons to avoid disclosing proprietary data.

According to the U.S. Census Bureau, U.S. imports of crude fused aluminum oxide for 2005 through the month of May were 93,300 tons valued at \$28.0 million, or an average of \$300 per ton. About 87% of the imports came from China, 8% from Venezuela, 5% from Canada, and less than 1% from other countries. Imports of crude fused aluminum oxide from China may not all be abrasive-quality material.

There were no reported U.S. imports of refined and ground fused aluminum oxide for 2005 through the month of May.

U.S. exports of fused aluminum oxide for 2005 through the month of May were 6,680 tons. The exports were valued at \$24.3 million, or \$3,640 per ton. Germany received 33% of the exports that were shipped; Canada 23%, Mexico 16%, Japan 12%, Republic of Korea 5%, and others 11%.

The Department of Defense stores fused aluminum oxide in the National Defense Stockpile (NDS), but all of the NDS aluminum oxide has been authorized by law for disposal. During the second quarter of 2005, the Department of Defense did not have any sales of fused aluminum oxide abrasive grain. NDS reported that 8,290 tons of fused aluminum oxide abrasive grain with an estimated value of \$2.98 million remained in the stockpile. The NDS has sold all of the crude fused aluminum oxide in the stockpile (Janet Rollins, Defense National Stockpile

Center, oral commun., September 7, 2005). No further stockpiling of crude fused aluminum oxide by the Department of Defense is anticipated. If the current authorized disposal rate and NDS sales schedules are continued, all of the stockpiled fused aluminum oxide abrasive grain could be sold by the end of 2006.

Silicon Carbide

Abrasive-grade silicon carbide is produced by one company in the United States. The total production during the second quarter of 2005 was estimated to be 10,000 tons of abrasive-grade silicon carbide with an estimated value of \$4.9 million. This total production figure has been rounded to the nearest 5,000 tons to avoid disclosing proprietary data.

Total U.S. imports of crude silicon carbide for 2005 through the month of May were 53,500 tons valued at \$27.1 million; imports from China alone were 44,500 tons valued at \$23.5 million. The average price of imported crude silicon carbide, excluding Chinese crude, was \$392 per ton; the average price of Chinese crude was \$529 per ton. U.S. imports of refined and ground silicon carbide for the same period were 22,107 tons valued at \$25.5 million, or an average of \$1,150 per ton. During the period, China accounted for 83% of the crude material and 35% of the refined and ground material.

U.S. exports of crude silicon carbide for 2005 through the month of May were reported to be 1,420 tons with a value of \$2.48 million. Exports of refined and ground silicon carbide were 3,510 tons valued at \$3.41 million. About 86% of the crude material was shipped to, in decreasing order, Norway, Mexico, and Japan. About 92% of the refined material went to, in decreasing order, Canada, Mexico, and France.

The NDS has sold all of the silicon carbide in the stockpile. No further stockpiling is anticipated.

Metallic Abrasives

Metallic abrasives information was collected from 12 companies operating 13 U.S. plants. During the second quarter of 2005, four companies produced 51,000 tons of steel shot and grit, an increase of 4%, compared with the same period in 2004. At least one of the companies produced shot and grit from

reclaimed material. Total second quarter production was valued at \$23.4 million, or an average of \$458 per ton. Total annual production in 2004 was 193,000 tons valued at \$87.8 million; 2003 production was 192,000 tons valued at \$86.2 million; 2002 production was 201,000 tons valued at \$91 million.

Shipments of steel shot and grit in the second quarter of 2005 were 55,600 tons valued at \$26.9 million, or an average of \$484 per ton, compared with shipments during the second quarter of 2004, which were 53,300 tons valued at \$24.9 million for an average of \$467 per ton.

During the second quarter seven companies produced 609 tons other types of metallic shot and grit (primarily cut wire shot) valued at \$2.23 million.

Imports of all types of metallic shot and grit for 2005 through the month of May were 6,580 tons valued at \$4.97 million for an average of \$756 per ton. Canada was the largest supplier, accounting for 67% of the tonnage imported.

Exports of all types of metallic abrasives for 2005 through the month of May were 10,300 tons valued at \$8.44 million, or an average of \$818 per ton. Shipments to Mexico accounted for 47% of the exports; an additional 44% was shipped to Canada.

TABLE 1
MANUFACTURED ABRASIVES¹

(Metric tons, unless otherwise specified)

Source and product	2004						2005			
	Second quarter		Third quarter		Fourth quarter		First quarter		Second quarter	
	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)
United States and Canada, production: ²										
Silicon carbide ³	10,000	\$5,300	10,000	\$4,900	10,000	\$4,900	10,000	\$4,900	10,000	\$4,900
Crude aluminum oxide, regular-grade	(4)	(5)	5,000	1,500	5,000	1,500	5,000	1,500	5,000	1,500
United States, production:										
Steel shot and grit	49,100	22,300	50,900	23,200	46,600	21,300	53,100	24,300	51,000	23,400
Other shot and grit ^{5, 6}	318	1,040	406	1,360	297	1,070	451	1,460	609	2,230
Total	49,400	23,300	51,300	24,600	46,900	22,300	53,500	25,700	51,600	25,600
United States, shipments:										
Steel shot and grit	53,300	24,900	48,900	22,300	45,900	21,100	56,400	27,400	55,600	26,900
Other shot and grit ^{5, 6}	340	1,250	357	1,290	273	950	480	1,720	583	2,090
Total	53,600	26,100	49,300	23,600	46,200	22,000	56,900	29,200	56,200	29,000

⁵Estimated.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Quantities are rounded to the nearest 5,000 tons to avoid disclosing proprietary data; values are estimated.

³Includes materials for metallurgical uses and other applications.

⁴Less than 2,500 tons.

⁵Less than \$500,000.

⁶Includes cut wire shot and reclaimed shot and grit from primary producers.